Chapter 2
Value Creation

I.   **Chapter Overview**

   Many pricing decisions are made which do not thoroughly capitalize on the value that consumers are capable of realizing and in turn, paying for. This chapter discusses value and how customers determine value. It then lays the groundwork for effective pricing by helping the marketer understand this value, how it differs within segments.

II.   **Key Learning Objectives**

   - Define value and explain its role in pricing strategy
   - Describe approaches to estimate value for different types of benefits
   - Show how value-based segmentation can enable a company to more profitably align what it offers with differences in what consumers are willing to pay

III.   **Major Teaching Points**

   - Discuss the statement "Value is what someone is willing to pay." What is necessary to make that statement true. In what types of transactions is it likely to be false? Why might a potential customer not buy a product for which the value were more than the price? This discussion will start students thinking about issues that make pricing strategy much more complicated than simple "price optimization."

   - Be certain to clarify the concept of value – use value versus economic value, actual versus perceived value – Important areas to probe for student understanding include reference value, positive differentiation value, negative differentiation value and total economic value.

   - Areas of importance include communicating to the students how to estimate economic value – the steps, value drivers (cost drivers, revenue drivers), and value calculations. There is no need to "boil the ocean" by understanding how every feature and service creates value for the customer, since those that have become "commodities" have their value determine by competition. It is necessary to understand and quantify benefits only for those features and services that are differentiated from competitive offerings. Ask: "What if there is not competition?" Then every feature or service potentially creates a differentiating benefit and value.

   - Beware of shortcuts or counterfeits to true economic value estimation, e.g., value is proportional to the difference between benefit or feature performance, value is ratio scaled, or value can be measured using Customer Value Modeling These methods generally understate the truly differentiated value you deliver, and overstate the commodity dimensions of the value you deliver along with other competitors. [See references cited in book]

   - Value segmentation is superior to other segmentation criteria – based on other frequently used methods – because it doesn't merely describe buyers that buy, or describe the reasons they buy; instead it objectively measures the motivations for

buying – the underlying value that motivates customers. This is more useful for pricing.. It also facilitates ranking segments in terms of potential profitability based on the economic value they receive.

- The steps to value segmentation are based on more than merely market-focused drivers of value to your customers. They also consider the overlap of your own operational advantages on those value drivers to identify and prioritize segments that most profitably match your own ability to create and deliver value to customers

IV. **Additional Teaching Suggestions**
Additional Teaching Suggestions for <u>The Strategy and Tactics of Pricing, Fifth Edition</u> are located in the "Notes" view of the PowerPoint slides. In addition to teaching suggestions, each chapter includes examples and discussion questions.

V. **Discussion Questions – You may consider assigning the following questions before class.**
1. Why is it difficult to determine reference prices? Consider a new commercial office cleaning service opening in a local city. What challenges would they find in determining their customer's reference price? How would they find this information?
2. Provide an explanation of why it is important to understand your customer's business model when pricing a product used in production.
3. What are the limitations of estimating economic value when estimating prices?
4. Consider your next automobile purchase. How will monetary and psychological value drivers influence your purchase? Which drivers will be the most important? How might they affect your willingness to pay?

VI. **Exercises and Caselets (see below)**
- Miracle Shield Auto Finish
- Russian Technology
- VBlock Antinausea Drug

VII. **Other Resources**

1. Cases
- Coca Cola's New Vending Machine (A): Pricing to Capture Value or Not?, HBS (500068-HCB-ENG)
- Trilogy Corp.: Customer Value-Based Pricing, HBS (KEL 106-PDF-ENG)
- American Airlines Value Pricing (A), HBS (594001)
- Deere and Company Industrial Equipment Operations, HBS (577112)
- Medi-Cult, Pricing a Radical Innovation, (IMD004)
- Optical Distortion, Inc. (A), HBS (575072)
- The Medicines Company, HBS (502006)

2. Online Resources:
There are additional resources at the following link:
http://demo.leveragepoint.com/strategyandtacticsofpricing where you will find additional resources that you and your students can use to explore and

discuss the concepts in this book. This includes access to the educational version of LeveragePoint for Value Management, a software suite developed by LeveragePoint Innovations that implements some of the ideas in this books and is used by companies to understand and communicate the value of their offers.

3. **Suggested Readings**

Anderson and Narus, "Business Marketing: Understand What Customers Value," *Harvard Business Review*, November-December 1998, pp. 53-65.

Forbis and Mehta, "Value-Based Strategies for Industrial Products," *Business Horizons* 24, No. 3, May-June 1981, pp. 32-42.

Shapiro and Jackson, "Industrial pricing to meet customer needs," *Harvard Business Review*, November-December 1978, pp. 1-10.

Smith and Nagle, "Pricing the Differential", *Marketing Management,* May/June 2005, pp.28-32.

Smith, "Segmenting B2B Markets with Economic Value Analysis", *Marketing Management,* March/April 2002, pp.35-39.

MIRACLE SHIELD AUTO FINISH

Miracle Shield Auto Finish is the best car polish and paint protection available anywhere. It is a substitute for wax, but it protects and maintains the shine of a car's finish at least 20% longer than regular car wax. It is sold in a bottle that is adequate for one application to one car. Regular wax, which is sold in a container that is enough for two applications, costs about $4.00/container.

Some cars (about half) have oxidized paint (no shine) at the time wax is to be applied, requiring cleaning with an oxidation cleaner <u>before</u> one can apply regular car wax. Oxidation cleaner costs $2.50 per bottle (good for one application) and can be applied in about the same time required to apply either an oxidation cleaner or regular wax, about two hours. An additional advantage of Miracle Shield, however, is that it <u>both</u> removes the oxidation and shines the car's surface <u>in one step</u>. Consequently, Miracle Shield can be applied directly to a car's surface that is already highly oxidized.

A. <u>Making any reasonable assumptions that you need to make</u>, estimate the economic value of Miracle Shield. (You may assume that Miracle Shield is the only alternative to car wax available in this market. You may assume a labor cost of a person's leisure time who waxes his/her own car. Ignore the time value of money.)

B. There are a number of factors that influence price sensitivity other than "economic value." Consequently, it may be the case that customers would not be willing to pay as much as this product is really worth, or may pay even more than it is worth according to economic value analysis. Please identify at least two other factors that could influence how much people would be willing to pay for this product. Explain how and why you think these other factors might affect willingness-to-pay in this case.

MIRACLE SHIELD AUTO FINISH
Instructor's Note

A. Making any reasonable assumptions that you need to make, estimate the economic value of Miracle Shield. (You may assume that Miracle Shield is the only alternative to car wax available in this market. You may assume a labor cost of a person's leisure time who waxes his/her own car. Ignore the time value of money.)

Answer: There are two segments relevant for determining the economic value of Miracle Shield: 1) cars which require cleaning with an oxidation cleaner before applying regular car wax and 2) those which do not require an oxidation cleaner.

	Segment 1	Segment 2
Reference value:		
($4.00 or $2.00 per application)	$2.00	$2.00
Differentiation value:		
Oxidation cleaner	$2.50	NA
Labor savings of 2 hrs for not applying cleaner ($5.00/hr)	$10.00	NA
Improved performance:		
Saving in labor (20% of $10.00)	$2.00	$2.00
Saving in Wax (20% of $2.00)	$.40	$.40
Total Economic Value	$16.90	$4.40

B. There are a number of factors that influence price sensitivity other than "economic value." Consequently, it may be the case that customers would not be willing to pay as much as this product is really worth, or may pay even more than it is worth according to economic value analysis. Please identify at least two other factors that could influence how much people would be willing to pay for this product. Explain how and why you think these other factors might affect willingness-to-pay in this case.

Answer: Please refer to chapter 4 lecture notes for the 10 factors affecting price sensitivity.

VBlock Antinausea Drug

The Food and Drug Administration is about to approve Vblock as a safe and effective antinausea drug. Your job is to determine the appropriate price range. The value of antinausea drugs for post-surgical use is quite high for two reasons. One source of value is clinical - vomiting while the patient is under anesthesia can cause the patient to choke and have other serious complications. The second source of value is purely economic - the quicker patients' postsurgical nausea can be brought under control, the quicker they can be removed from the recovery room. The charge for use of the recovery room is $150/hour. Without the use of an antinausea drug, time in the recovery room would be approximately three hours. With current antinausea drugs, the time in recovery can be reduced by one-third.

Vblock is no more effective in reducing nausea than the current substitutes, the most popular of which is Nobarf, which sells for $12 per dose. However, because Vblock works through a different biological process, it offers advantages to this market that the substitutes do not:

- There is no interaction between Vblock and other drugs that the patient might be given. Approximately 30% of all surgeries require other drugs with which Nobarf and other antinausea drugs could interact, thus precluding their use. Consequently, the patient is at risk of postsurgical nausea and must be kept in recovery for the full three hours. Because Vblock works differently (on the gage reflex in the brain), it does not interact with other drugs and so can be used in all types of surgery.
- Nobarf needs to be administered before surgery and hourly thereafter. The typical surgery requires three separate doses of Nobarf. Vblock, however, is administered only once (before surgery). Its action continues for at least six hours. This is important for hospitals, since the cost of storing and administering a drug, in addition to the cost of the drug itself, is approximately $10/dose.
- While Nobarf has a sedative effect, contributing to postsurgical patients' feeling sleepy and disoriented, Vblock has no sedative effect. Consequently, controlled studies have confirmed that patients receiving Vblock spend an average of 20 minutes less time in the recovery room when compared with patients receiving the current antinausea drugs.

What is the relative economic value of Vblock in the surgical market?

Although the value of a single dose of an antinausea drug is greatest in the surgical market, an even larger market exists for reducing nausea associated with chemotherapy. Vblock, like Nobarf, is administered only once along with the chemotherapy, but is twice as effective in preventing nausea. How would you calculate the economic value of Vblock for this market segment?

VBlock Antinausea Drug
Instructor's Note

Because of the growing importance of cost containment in the health care industry, economic value analysis has become an important pricing and sales tool for pharmaceutical companies.
[For an example of a real, fully-detailed economic value analysis in this market, see: Alan Bakst,
"Pharmacoeconomics and the formulary decision-making process" <u>Hospital Formulary</u> Vol. 30, (January 1995)]. This case, while simplified by excluding other medical uses of antinausea drugs (e.g., as an adjunct to chemotherapy), is highly realistic.

<u>What is the relative economic value of Vblock in the surgical market?</u>

First, ask students what the value of this drug is?
Since time in the recovery room can be reduced by 1/3 (1 hour) with current antinausea drugs, and V-block replaces current drugs (like Nobarf), some students might argue that the value of Vblock is equal to one hour in the recovery room, or $150. Others might note that Vblock is more effective than Nobarf because it reduces time in recovery by 20 minutes more than competitive drugs, resulting in a value of $200 {=1 hr., 20 min. times $150/hr}. A particularly alert student might note that we need to subtract the $10 cost to administer the drug, resulting in an economic value of $190.

While these might be relevant values in use, would anyone actually <u>pay</u> anything close to this for the drug? Probably not. Why not? Because they can get most of that same <u>use value</u> for only $12 per dose, or $24 (2 times $12) over the course of treatment. Thus competition limited the amount of the use value that can be captured in the economic value. To calculate <u>economic value</u> of Vblock, we would first take the $24.00 that hospitals are paying now for competing drugs like Nobarf as a <u>reference value</u>. To that, we can add differentiation values for 20 minutes less time in recovery room and for being able to administer the drug only once rather than three times during the course of treatment:

Reference value	$36.00
Differentiation Values	
-Less time in recovery (20 min. × $150/hr.)*	50.00
-One administration saved (1 times $10)	20.00
Economic value	$106.00

[*A particularly sharp student might note that if the recovery room cost is a <u>sunk cost</u> (depreciation on the equipment), then a hospital might not actually gain such savings. Praise such an insightful comment and then make the assumption that the $150/hour is the incremental cost of the labor–or is the cost that a hospital charges to an HMO that must decide whether to put Vblock on its formulary of drugs that surgeons are encouraged to use.]

This $106 economic value, however, applies only to patients who could use Nobarf as an alternative. How do we calculate the value of being able to use Vblock for the 30% of surgeries in which no other antinausea drug could be used? Most students first reaction is to say that we should multiply 30% times the value when Nobarf cannot be used ($190) plus 70% times the value when Nobarf could be used ($106.00) to achieve a weighted average economic value for Vblock of $131.20. Now, ask the students what would happen if you could convince buyers of the values identified above and you priced Vblock just below this amount (say at $125 per dose)? Answer: A cost-minimizing hospital would buy Vblock for the 30% of surgeries for which the value of the drug ($190) vastly exceeded its cost, but would not buy it for the 70% of surgeries for

which the price vastly exceeded its value ($106). The point here is that <u>there are no average customers</u>. The company can either skim the market at a high price (near $190) to capture the 30% market share, or must penetrate the market at a low price (below $106) to capture a large part of the market. A half-way-between strategy just leaves money on the table for the high-valuing customers. Alternatively, the company might think of some way to segment the market, enabling it to charge different prices for uses in different types of surgeries.

<u>How would you calculate the economic value of Vblock for Chemotherapy?</u>

Here the value would not accrue to your direct customer, the hospital. You would need to calculate value to an employer (whose employee doesn't miss work on the day he or she gets treatment), or to a patient (who may be willing to pay out of pocket to avoid the nausea).

Pricing Russian Technology

Naum Staroselsky emigrated to the U.S. in 1974 from the then Soviet Union after 16 years as a Soviet expert on turbine controls. Staroselsky's specialty is the technology of gas compressors--big-ticket, industrial strength machinery used to pressurize and move gases though gas pipelines and within refineries and steel mills.

Fortunately for Mr. Staroselsky, compressors are finicky. Any number of conditions --a change in gas mix, a fluctuation in power, a change in temperature--can result in "compressor surge." In milliseconds, the flow of gas can reverse itself. At minimum, the surge will bring a gas pipeline to a screeching halt, requiring hours to restart. Worst case, the surge will mangle a compressor so badly that it takes days to replace at a cost that can reach six figures.

Naum Staroselsky realized that what goes on in the guts of a compressor can be mathematically modeled. It's all physics. The variables are many, and the interactions complex, but ultimately the conditions leading to a surge can be described by a handful of equations. That was an important discovery. Soon after Staroselky arrived in the U.S., he started Compressor Controls Corp. in Des Moines, Iowa. By 1978, Staroselsky and his fellow Russian colleagues had perfected their first surge-controlling machine. Initially, their mathematically-controlled version was little better than the mechanically-controlled versions that eliminate only about half of all surges on a pipeline and cost approximately $10,000 each. As they gained experience, however, they kept upgrading the software and hardware. Their current version eliminates 95% of naturally-occurring surges (making it 90% more effective than mechnical devices). Customers who have tried the product report being very satisfied with everything but the price.

The cost of making each surge-controlling machine is minimal. The machine consists of off-the-shelf temperature and pressure sensors, a British-made microprocessor, and a tiny chunk of software that fits into a mere 25 kilobytes of memory--less than you would find in a hand-held electronic organizer. Consequently, the manufacturing cost of the Compressor Control's equipment is no more than $1000. No one else can manufacture it, however, since no one else knows the equations that enable it to work so effectively.

● How would you determine the value of this product?

●What price do you think Compressor Controls should charge for this product?

Adapted by Thomas Nagle, Ph.D. from an article that appeared in <u>Fortune</u> magazine, January 18, 1993

OPTIONAL ADDITIONAL QUESTIONS

● How close to this value would you predict that customers would pay?
   What might keep some customers from paying the full economic value?
   How could you reduce those effects?

● How would you communicate that value to customers?

● What might keep some customers from paying the full economic value?
   How could you reduce those effects?

Teaching Notes: **PRICING RUSSIAN TECHNOLOGY**

This case is ideal for use later as well, since the discussion can be deal with issues of value communication and price structure, as well as value calculation. It makes a nice take-home exam case for later in the course. For a class discussion, let the students describe the process of coming up with economic value. They will identify that economic value depends on what it costs a pipeline company to repair a surge. Ask them, "What types of dcosts would be invovled? Then either give them costs numbers for those items or ask them to make good guesses. Following is an example of numbers you might use (all costs are per compressor since each compressor requires a surge protector):

Cost of a Surge (minor)
Labor	$ 9,000
Incre. materials, fuel	$ 6,000
Lost Production (8 hours to restart.)	$80,000

(assume that pipeline generates $10K/hr. of fees when transporting gas. Also assumes that outages occur during months when demand is high (hot and cost months).

$95,000

Frequency of minor surge per compressor   .4 per year
.4 X $95K = $38,000

Cost of a Surge (major)
Labor	$ 24,000
Incre. materials, fuel	11,000
Equipment (new compressor)	$180,000
Lost Production (24 hr. To restart)	$240,000

$455,000

Frequency of minor surge per compressor = .004 per year
.004 X $455K = $1820

REVENUE sources of value?
Customers of pipelines may be willing to pay more for more reliable delivery

Minimum Total Cost of Surges = $38,000 + 1820 = 39,820

Annual expected savings by using competitive product = .5 X 39,820 =$19,910/yr.

Differentiaion value of our product preventing 95% of surges =
    (.95 - .5) X $39,820= $17,919 annual differentiation value

Competitive product lasts four years. Ours in unspecified, but expect longer due to nonmechanical, buta ssume four years. Then over product life ours is worth: **$66,818**
Economic value per controller

4 yr. present discounted value* of $17,919 = **$56,818**
$10,000

*assuming 10% per annum cost of capital and that saved costs are paid at end of year.

COMMUNICATION OF VALUE:

Assume these numbers are correct. We go into purchaseing agent and offer our superior product, that replaces the product for which he's been paying $10,000 each, for a real bargain price. We offer it for $50,000 each. Since its worth $66,818 each, he is losing money by not buying our product. Do you think that he'll be thrilled, place an order immediately, and thank you for giving him such a deal?

Why not?

Difficult Comparison (prchasing Agent does not yet see the value)
Perceived risk (these value calculations are just your promise)
Perceived fairness (this improved surge protector is slightly less than twice as effective than the mechnaical one. Why isn't it, therefore, just slightly less than twice the price ($19,000)?
SO WHAT DO YOU DO? Some turkeys will suggest that we therefore have to charge a more fair price. Ask them what is fair. Since they now have a high reference, they will say something like $30K rather than $50K. Then paraphrase that they are going to go into this purchaisng agent with a product that costs three times as much but is risky. Probably still can't make the sale. We need to overcome the problems, not price to reflect them.

How do we overcome these problems? (Students will have lots of good ideas)
*free sample on just five of his 100 compressors for 1 year. Demonstate value.
*Money-back gurarantee
*Rent the suppressors on an annual basis
*Don't sell the suppressors at all. Offer the company a discount pipeline maintenance contract that guarantees at least some minimum reduction i